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The Course of Profits During the War

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THE counterpart of the cost of living indexes used in so many cases during the war to settle conflicts over wages is an index of profits; for the motive behind wage demands was only in part a matter of rising price levels and rising consumer costs; it was equally a belief on the part of the wage earner that the *relative* share of capital or management in the national product was increasing, that business men and business firms were receiving vast profits from their war production. In this day of appeal to facts the only way of meeting such a belief and satisfying the demand that goes with it lies in the application of scientific methods to the measurement of the phenomenon in question.

When it comes, however, to the matter of constructing an index of profits the task is far from simple; it is by no means as satisfactory as the determination of an index number of prices, for it involves an immediate appeal to industrial accounting systems and the prerequisite to thoroughly satisfactory results is uniform accounting methods. The uniformity of our railroad accounting systems, established after a generation of legislative and administrative struggle, offers a marked contrast to accounting in other fields of privately owned and operated industry.

It is possibly a safe forecast of the near future to assume that the interest

of the public in profits will increase rather than decrease. The deep interest which the public has shown and is showing in such fundamental industries as coal production may well lead to a greater measure of public control and to a demand for more uniform methods of accounting. The changes in accounting methods by industrial concerns since the passage of the income tax law has been little short of phenomenal.

RATE OF PROFITS PROBLEM

Were it possible to obtain data, which at the present time is confidential, the problem of the rate of profits could best be studied from the income tax returns in the office of the Collector of Internal Revenue; for here, the accounting difficulties of the problem have been dealt with and a rate of profit ascertained as a basis for the imposition of the tax. It is recognized even here, however, that uniform results cannot be obtained for all business units; the valuation of assets, for instance, is fundamental to the determination of capital invested and thereby of rate of earnings; but capitalization in some cases represents no water, in some cases more or less water. The proper method of reflecting the influence of changing price levels on the valuation of assets remains an insuperable difficulty and certain it is that there is little uniformity in the methods of dealing with this problem. So after all, there is

Note—Mr. C. E. Olson and Mr. F. E. Ringham assisted materially in the preparation of the tables included in this study.

a great deal that is arbitrary in the governmental method of arriving at a rate of earnings. This arbitrariness is not removed by the power of the Federal Bureau to compel the giving of information.

While an index number of profits for all industries or for groups of related industries might therefore be constructed, it would have a large degree of untrustworthiness because of the lack of homogeneity of the data from which it was constructed. For this reason, the method of this brief study will be to construct an index number of profits for particular corporations and to make no attempt to combine them into a general industry index. By this means, it is believed, the difficulties due to lack of comparability of data will be reduced to the minimum at present possible for an individual investigator, since it will be confined to lack of comparability of the data of a particular corporation at different periods of time and will not involve comparisons between corporations.

Relation of Profits to Wages

The problem involves no judgment as to the justification of earnings, as to whether a particular level is too high or too low, but specifically the question whether over a period of time profits have changed *relatively* to wages, that is, whether they were higher or lower at one time than at another. The issue which brings this matter forward is, of course, the question whether profits have risen more rapidly than wages during the war; or, otherwise stated, whether the *relative* share of the business man or capitalist, as opposed to that of the wage earner, in the

national dividend is greater or less than in pre-war years. The data given below deals with only one side of this problem—the profits side. No attempt is made to construct wage indices or even to quote available ones but indices of profits for particular corporations are constructed and their reliability considered.

In attempting to obtain statistical evidence on this problem it is necessary at once to rule out a considerable share of the field of business enterprise; for only those business units can be studied which publish adequate accounts for the period of years covered by the study. Thus wholesale and retail business, a very important factor, must be left out; the coal companies, producing one of the fundamental necessities of our national life, must be left out, in spite of the fact that Mr. McAdoo's recent remark has made us all want to pry into the secrets of their income accounts. The railroads are omitted, of course, because they were not operated during the period of our own belligerency as private enterprises. The study is confined, therefore, to corporations which list their securities on the various stock exchanges of the country, and for that reason publish fairly complete statements of assets and income. The securities of most of the corporations selected are known to be listed on the New York Stock Exchange, although the list has not been checked to ascertain if all are so listed. The selections were made from a list of about one hundred and fifty corporations published in an investment bulletin in the writer's possession and, with the exception of "rails," includes every corporation listed concerning which

the facts as to investment and earnings could be obtained for the years 1910, or 1911 to 1918 from Poor's or Moody's Manuals. The manuals containing data for the year 1919 were not available. This test ruled out companies organized or reorganized since 1910, and a few in which the accounting methods, or at least the published accounts had changed to such an extent that the figures for various years were not comparable.

Earnings and Investments

The difficult problem in forming an index of corporation earnings is to determine what constitutes "earnings" and what constitutes "investment." Following the procedure of the Federal Internal Revenue office, the method here used has considered that the investment of the owners (stockholders) comprise that portion of the total assets which are not held as definite obligations against the stockholders. Speaking broadly, this includes the stock capital and the surplus. The management of reserves, however, has an important bearing on surplus. The "reserves" shown in balance sheets are in some cases clearly a part of the surplus representing the investment of the owners; in other cases it has been difficult to say what their nature is. Where it was clearly evident that certain reserves represented part of the equity of the owners as, for instance, "reserves for additions and betterments," they have been included in the item "invested capital."

Depreciation Reserves

There is another difficulty in dealing with reserves and that is consistency

in making proper reserve deductions. It might be hoped that in the very important matter of depreciation reserves and of ore depletion reserves in mining companies, a corporation would pursue a consistent policy over the period studied. But that this has not been the case is only too evident. Depreciation is a physical fact and operates continuously, but the general policy seems to have been to write off asset depreciation very sparingly, if at all, in lean years and very generously in years of high profit. This cannot help but introduce an element of unreliability in the figure representing investment.

Valuation of Assets

Another difficulty in determining capital invested occurs in the matter of valuing assets. This would be a most serious matter if the attempt were made to combine results for various corporations into a general profits index, and was one of the main considerations in the decision not to construct a general index. But it offers difficulties even with a single corporation. The stock capitalization of a concern may at one time be greatly watered, as was the case when the Steel Corporation was organized, whereas at a later period there may be tangible assets back of every dollar of capitalization. In one or two cases good will or patents have been given a large value in early years and later shown in the balance valued at one dollar. These considerations incline one to the belief that any index of profits may have too wide an element of error to be used with safety and to decide that the time is not yet come for a statistical determination of the

question. These difficulties, however, lie in the original data, not in the method of constructing an index, and if the index is necessary to settle problems of large public import, its use will bring forth a refinement of the data on which it is based.

The profits ratio has been determined by taking the percentage of "earnings applicable for dividends" to the invested capital. The former is not much more easily determined than the latter. "Earnings applicable for dividends" is theoretically the net income after deduction of operating expenses, fixed charges and such reserves as ore depletion, depreciation, repairs, replacements, etc. But here again these latter charges have been small or entirely absent in poor years and have been made, in some cases, in great abundance in such prosperous years as 1917. Failing to show proper depreciation reserves in the balance sheet tends to increase the book value of "invested capital" and therefore to decrease the profit per cent for that year; failure to deduct such reserves from "income available for dividends"

has the opposite effect and in far greater proportion.

In calculating the percentage of earnings to invested capital for each year these difficulties have been recognized, and they cast sufficient doubt on the yearly percentages obtained to make certain that no fine distinctions can be drawn from them. It is probable that as a general indication of the direction of profits and of the approximate changes in profit levels during the war, they are reliable.

While space limitations forbid the publication of all the data from which the yearly profit percentages of the various corporations have been calculated, the work sheet for the United States Steel Corporation is here included as an illustration of the method employed. Since the Steel Corporation produces about 50 per cent of the iron and steel output of the country, its percentages are in themselves a fairly representative index of profits in the iron and steel industry.

The calculations were made mostly on a slide rule and are probably accurate to one-tenth of one per cent.

UNITED STATES STEEL CORPORATION

Fiscal Year Ended Dec. 31	Stock Capitalization ^a	Surplus ^b	Total Invested Capital	Earnings Applicable for Dividends	Ratio Year's Earnings to Capital Invested at Beginning of Year
1909	\$868,583,600	\$130,401,396	\$998,984,996
1910	868,583,600	165,641,908	1,034,225,508	\$87,407,185	8.7%
1911	868,583,600	173,691,195	1,042,274,795	55,300,297	5.3%
1912	868,583,600	176,716,245	1,045,299,845	54,240,049	5.2%
1913	868,583,600	213,152,210 ^c	1,081,735,810	81,216,986	7.8%
1914	868,583,600	190,204,472	1,058,788,072	23,496,768	2.2%
1915	868,583,600	235,025,329	1,103,608,929	75,833,833	7.2%
1916	868,583,600	436,360,913	1,304,944,513	271,531,730	24.6%
1917	868,583,600	541,660,804	1,400,244,404	224,219,565	17.2%
1918	137,532,377	9.8%

^a Does not include stocks of subsidiary companies not owned (approximately \$600,000).

^b Includes investments in property account additions and construction.

^c Includes Gary plant special construction fund, \$6,353,781.

For the purpose of obtaining summary figures for comparing pre-war and war-time profits the yearly profit percentages for the corporations included in the study were combined in the following manner: (1) a normal pre-war period; (2) the period of the entire war; the latter was then divided into two sub-periods with United States (3) as a neutral and (4) as a belligerent. The danger of using a single year as representative of normal pre-war conditions led to the decision to average the results of the four years preceding the outbreak of the European conflict. In a few cases where data were available only for the last three years preceding the war, these three years were used. All such cases have been marked in the tables. Another variation occurs in the case of corporations, the fiscal years for which end on dates other than December 31. Where the fiscal year ended on June 30, July 31, or August 31, the four pre-war years included the period from that date in 1910 to the same in 1914. In the majority of instances the pre-war period covers only to December 13, 1913. For a few cases data for 1918 were not available and period four, therefore, covers one year only; period two, in this case, covering four years.

The method of averaging the yearly percentages produces the same result, usually to one-tenth of one per cent, as the theoretically more correct method of dividing the sum of the earnings for the period by the sum of the yearly amounts of capital invested. The reason for the close correspondence in the results is due, of course, to the slight change from year to year in the denominator of the

ratio. In some dozen cases in which period ratios were calculated by both the longer and the shorter methods the results agreed within the limits stated above.

The resulting percentages of earnings for each of the four periods for each corporation are grouped together in broad industry groups as follows:

1. Steels and equipments
2. Metals
3. Motors and rubbers
4. Sugars, Leathers and Oils
5. Public utilities
6. Food products and chemicals
7. Miscellaneous

This grouping furnishes a rough indication of what might be desirable if the results were to be combined into general indices for particular industries or a single index for all industries.

SUMMARY OF CONCLUSIONS

Certain conclusions incidental to the chief purpose of this study force themselves upon one's attention. They are, in the main, that the source material for an index of profits is extremely unsatisfactory, due both to lack of uniformity in accounting methods and to the inadequate or scientifically incorrect method of dealing with reserves. The income tax law, however, has produced a very excellent effect in clarifying the balance sheets and income statements of many corporations since 1913.

The final summaries for the various corporations shown in the tables following permit certain general conclusions in support of what has been a matter of general observation. The iron and steel industry shows a very large increase in the rate of profit

STEELS AND EQUIPMENTS

	U. S. Steel	Gloss Sheffield*	Lackawanna Steel	Crucible Steel	Bethlehem Steel	Republic Iron and Steel ^a	Railway Steel and Spring	Pressed Steel Car	American Locomotive	New York Air Brake	Westinghouse Air Brake
Pre-war period	6.8	3.0	4.3	5.6 ^d	7.1	4.3	4.6	4.4	5.7	5.4 ^c	17.3 ^b
Total War period	12.2	6.5	14.9	15.7	32.5	12.8	8.6	6.0	8.8	23.4	24.4
U. S. Neutral period	11.3	4.8	10.2	14.9	41.7	10.7	5.8	4.9	8.9	31.3	21.2
U. S. Belligerent period	13.5	9.1	22.0	18.1 ^d	18.7	16.0	12.9	8.6	8.5	11.5 ^c	34.1 ^b

Relatives

	100	100	100	100	100	100	100	100	100	100	100
Pre-war period	100	100	100	100	100	100	100	100	100	100	100
Total War period	179	216	346	280	457	297	187	136	154	433	141
U. S. Neutral period	166	160	237	266	587	249	126	111	156	580	123
U. S. Belligerent period	198	303	511	323	263	372	280	195	149	213	197

^a Fiscal years 1910-12 ended June 30; 1913 and thereafter ended December 31; pre-war period includes fiscal years 1910, 1911, 1912, 1913.

^b Fiscal year ended July 31; pre-war period therefore fiscal years end 1911 to 1914; period No. 4 (U. S. Belligerent) covers 11 months ending December 31, 1918.

^c Fiscal year ends June 30; pre-war period fiscal years ending 1911 to 1914; fourth period covers fiscal year 1918 only.

^d Fiscal year ended August 31; pre-war period covers four fiscal years to August, 1914; fourth period includes only fiscal year 1918.

* Fiscal years ended November 30 till 1917.

during the war and with few exceptions a greater rate while the United States was actively involved than while we were neutral. Metals had much the same history but apparently saw their most prosperous time during our period of neutrality.

The motor and leather relatives are significant because of the unusually high levels they reached during the

war; the public utilities equally significant for the very general decreases in their profit levels.

Food products, chemicals, sugars and the miscellaneous group show fairly wide variations but in most cases very large increases.¹

¹ The comparisons of general price levels in different countries can be made by turning to the article on page 13 by Liefur Magnusson.

METALS

	Anaconda Cop- per	Colorado Fuel and Iron	Utah Copper	U. S. Smelting, Refining & Mfg.	American Smelt- ing and Refining
Pre-war period	10.4*	2.5 ^a	31.7	7.2	7.2
Total War period	18.4	5.2	44.2	9.3	9.8 ^b
U. S. Neutral period	19.9	4.8	51.1	10.7	9.4
U. S. Belligerent period	16.2	6.2 ^a	33.9	7.2	11.0 ^b

Relatives

	100	100	100	100	100
Pre-war period	100	100	100	100	100
Total War period	177	208	139	129	136
U. S. Neutral period	191	192	161	149	131
U. S. Belligerent period	156	248	107	100	153

^a Fiscal years ended June 30, until 1918; therefore, pre-war period fiscal years ending 1911 to 1914; data for fourth period covers only calendar year 1918.

^b Total war period covers only four years; United States belligerent period covers only 1917.

* Pre-war period three years, 1911-13.

MOTORS AND RUBBERS

	General Motor Co. ^a	B. F. Goodrich Company	Studebaker Corp.	U. S. Rubber Company	Willys Overland Co.
Pre-war period	16.4	3.0 ^b	4.9	6.6 ^c	18.6 ^d
Total War period	38.0	10.4	11.6	8.5	18.0
U. S. Neutral period	42.5	9.4	15.1	6.7	25.3
U. S. Belligerent period	31.2	11.9	6.3	11.1	7.0

Relatives

	100	100	100	100	100
Pre-war period	100	100	100	100	100
Total War period	231	333	236	129	97
U. S. Neutral period	259	313	308	101	136
U. S. Belligerent period	190	397	129	168	38

^a End of fiscal year changed in 1917 from July 31 to December 31.

^b Pre-war average based on only one year ending December 31, 1913.

^c End of fiscal year changed in 1913 from March 31 to December 31.

^d Pre-war average based on one year only, ending June 30, 1914; end of fiscal year changed in 1914 from June 30 to December 31.

SUGARS, LEATHERS AND OILS

	<i>Sugars</i> American Sugar	American Beet	Cuban American Sugar	<i>Leathers</i> American Hide and Leather Co.	Central Leather Co.	<i>Oils</i> General Asphalt Co.	Mexican Petroleum	Texas Company
Pre-war period.	5.6 ^a	6.6 ^b	4.9 ^c	1.0	4.4	3.7	8.6 ^d	14.5
Total War period.	7.5	12.2	19.7	5.6	10.5	2.5	9.2	23.6
U. S. Neutral period.	6.4	14.9	24.5	5.0	10.5	2.1	7.1	24.3
U. S. Belligerent period.	9.1	8.1 ^b	11.5 ^c	7.6	10.6	3.6	12.4	21.5 ^e

Relatives. Pre-war Period = 100

	100	100	100	100	100	100	100	100
Pre-war period.	100	100	100	100	100	100	100	100
Total War period.	134	185	400	560	238	68	107	163
U. S. Neutral period.	114	226	500	500	338	57	83	168
U. S. Belligerent period.	162	123	232	760	241	97	144	148

^a Three year average.^b Fiscal year ended March 31; pre-war period therefore includes four years ending March 31, 1914; fourth period includes two years ending March 31, 1919.^c Fiscal year ended September 30; pre-war period includes four years ending September 30, 1914; fourth period is for fiscal year 1918 only.^d Pre-war average based on two years ending December 31, 1913.^e Fourth period is for fiscal year 1918 only.

PUBLIC UTILITIES

	American Tele- phone and Telegraph	Brooklyn Rapid Transit	Consolidated Gas (Baltimore)	Detroit United Ry.	Laclede Gas	Peoples Gas (Chicago)	Western Union	Consolidated Gas (N. Y.)	Detroit Edison
Pre-war period.	5.3	7.8 ^a	5.8 ^a	7.7	7.5	6.2	3.5 ^b	6.7	9.8 ^a
Total War period.	5.2	5.9	7.0	6.9	5.5	2.6	8.0	6.1	11.3
U. S. Neutral period.	5.3	6.3	7.0	7.8	8.2	5.5	7.5	6.6	12.6
U. S. Belligerent period.	4.9	4.7 ^a	7.0 ^a	5.6	1.5	-1.7	8.7	5.4	9.6

Relatives. Pre-war period = 100

	100	100	100	100	100	100	100	100	100
Pre-war period.	100	100	100	100	100	100	100	100	100
Total War period.	98	76	121	90	73	42	228	91	115
U. S. Neutral period.	100	81	121	101	109	89	214	98	129
U. S. Belligerent period.	92	60	121	73	20	-27	248	81	98

^a Fiscal year ended June 30; pre-war period includes four fiscal years to June 30, 1914; fourth period includes fiscal year 1918 only.^b The end of the fiscal year changed from June 30 to December 31 in 1913. The six months from December 31 to June 30, 1913, were included in the figures for the years ending June 30, 1913, and December 31, 1913. Both were used in the average.^c Only a three year average.

— Deficit.

FOOD PRODUCTS AND CHEMICALS

	American Cotton Oil	American Drug-gist Syndicate	American Linseed	Booth Fisheries	Corn Products	International Agri. Corp.	Loose Wiles Biscuit Co.	National Biscuit Co. ^g	U. S. Industrial Alcohol	Wilson & Company
Pre-war period.....	2.9 ^a	10.0 ^b	.6 ^c	4.0 ^b	2.6 ^d	3.8 ^e	4.0 ^f	8.0	4.5 ⁱ	4.1 ^f
Total War period.....	4.2	10.6	4.5	8.0	7.2	5.0	5.3	6.7 ^b	14.3	11.6
U. S. Neutral period....	4.4	10.7	4.2	6.0	5.0	3.8	3.4	6.5	11.1	8.3
U. S. Belligerent period.	3.8 ^a	10.5	5.5 ^c	10.9	10.5	8.9 ^e	8.1	7.0 ^b	19.0	16.6

Relatives. Pre-war period = 100

	100	100	100	100	100	100	100	100	100	100
Pre-war period.....	100	100	100	100	100	100	100	100	100	100
Total War period.....	145	106	425	200	277	132	132	84	318	283
U. S. Neutral period....	152	107	396	150	192	100	85	81	246	202
U. S. Belligerent period.	131	195	518	272	404	234	203	87	423	405

^a Fiscal year ended August 31; pre-war period includes four years ending August 31, 1914; fourth period is for fiscal year 1918 only.

^b Average is for two years ending December 31, 1913.

^c Fiscal year ended September 30; pre-war period includes four years ending September 30, 1914; fourth period is for fiscal year 1918 only.

^d Fiscal year changed from February 28 to December 31 in 1912; the figure on December 31, 1912, was for 10 months.

^e Fiscal year ended June 30; pre-war period 1911 to 1914; fourth period is for fiscal year 1918 only.

^f Pre-war period is for fiscal year 1913 only.

^g Fiscal year ended January 31.

^h Fiscal year changed from January 31 to December 31 in 1917. Figures for December 31, 1917, is for eleven months.

ⁱ Three year average.

MISCELLANEOUS CORPORATIONS

	General Electric	American Can	Virginia-Carolina Chemical	American Agric. Chemical	National Lead	American Woolen	Westinghouse Electric
Pre-war period.....	12.1	4.8	4.0	5.5	5.0	2.8	7.7
Total War period.....	12.9	7.8	8.8	10.2	6.9	9.4	16.4
U. S. Neutral period.....	11.0	6.7	7.3	8.9	5.4	6.2	16.8
U. S. Belligerent period.....	15.2	9.4	13.2	14.2	9.2	14.1	15.8

Relatives

	100	100	100	100	100	100	100
Pre-war period.....	100	100	100	100	100	100	100
Total War period.....	107	163	220	185	138	336	213
U. S. Neutral period.....	91	140	182	162	108	221	218
U. S. Belligerent period.....	126	196	330	258	184	504	205

^a Fiscal year ended May 31; pre-war period includes four fiscal years to May 31, 1914; fourth period includes fiscal year 1918 only.

^b Fiscal year ended June 30; pre-war period includes four fiscal years to June 30, 1914; fourth period includes fiscal year 1918 only.

^c Fiscal year ends March 31; pre-war period includes four years to March 31, 1914; last period two years to March 31, 1919.